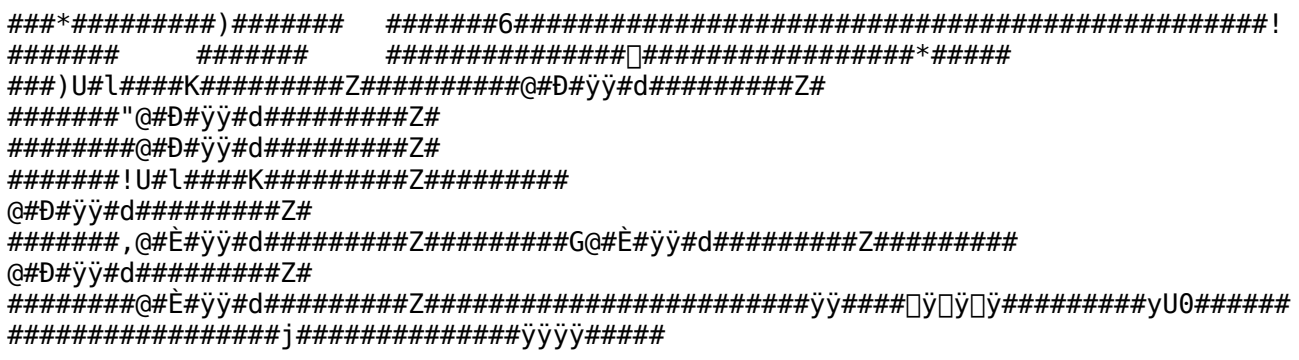

Task Section paragraph#Subpoint#Listing#after#Caption#Section Subhead#Section Heading Reference#Title#title line 2 and beyond#para#ref

Task Section paragraph#Subpoint#Listing#after#Caption#Section
Subhead#Section Heading Reference#Title#title line 2 and beyond#para#ref

```
#################$#########################ÿ¥#ÿÿ#d#########Z########L#□###ûïöþÿ
#¡ÿÿ####ÿÿ#####ÿl#ÿÿ#K#########Z###########JDr. Arthur W. Kelley#Associate
ProfessorK.C. Armstrong#Research Assistant#
```

```
###########################################ÿ¥#ÿÿ#d#########Z########L#□###û¹ø##Y
#øÿÿ####ÿÿ####@ÿÐ#ÿÿ#d#########Z#
#########ÓCommon power semiconductor module Ð#excellent prospectVoltage rating
Current ratingFunctionalityCommon filter module Ð#poor prospectRequirements
differ depending on applicationConstantly redesigning filters##
```

###ÿ¥#ÿÿ#d#########Z########L#□###û¹ø##Y
#øÿÿ####ÿÿ####@ÿÐ#ÿÿ#d#########Z#
#########éDesignProperly characterize inductors and capacitorsAccurately predict size, weight and lossSelection of filter topology PrototypeMinimize experimental workMinimize iteration with design stageManufactureIdentical to prototypeÆ#

##ÿ¥#ÿÿ#d#########Z########L####û¹ø##Y #øÿÿ####ÿÿ####@ÿÈ#ÿÿ#d#########Z###########*Distributed air gap (powdered) materialsPowdered ironMolybdenum permalloy powder (MPP)Kool MmDifficult to predict performanceCore lossManufacturerÕs loss data for sine-wave onlySubject to measurement error especially for low-permeability materialsWinding lossSkin and proximity effect loss#

###ÿ¥#ÿÿ#d#########Z########L#□###û¹ø##Y
#øÿÿ####ÿÿ####Uÿl#ÿÿ#K#########Z###########¤Linear core Ð sine wave voltage and
currentSense winding excludes excitation winding lossWattmeterP = V I cosQQ
approximately 90¡Very sensitive to#phase errors#

###ÿ¥#ÿÿ#d#########Z########L#□###û¹ø##Y
#øÿÿ####ÿÿ####Uÿl#ÿÿ#K#########Z###########VNot subject to#phase errorsOwn set
of error#mechanismsVerify electrical#measurements#